Operation Analytics and Investigating Metric Spike

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Case Study 1: operation analytics

Project Description:
The project's main objective is to discover areas for improvement by analyzing a company's employment review processes using operational analytics. I analyzed job data from November 2020 using SQL as a Data Analyst to find trends, throughput, and language distribution. The investigation focused on peak review periods, efficiency indicators, and language preferences in an effort to shed light on work performance. Decision-making procedures are enhanced and strategies for operation are optimized with the aid of this information.

Approach:
I took the following actions to carry out the analysis:

- Data Preparation: Imported the job_data CSV file into the job_data table after creating a MySQL database.
- Developing SQL Query: Created SQL queries to handle every task listed in the case study. This includes language share, throughput analysis, duplicate row identification, and the computation of jobs examined over time.
- Data analysis: Ran the SQL queries to draw conclusions from the information. Every query sought to provide a solution to a particular query and draw significant inferences from job review metrics and patterns.
- Interpretation of Insights: Examined the outcomes of the SQL queries and summarized important conclusions that might guide changes to operations.

Tech-Stack Used:

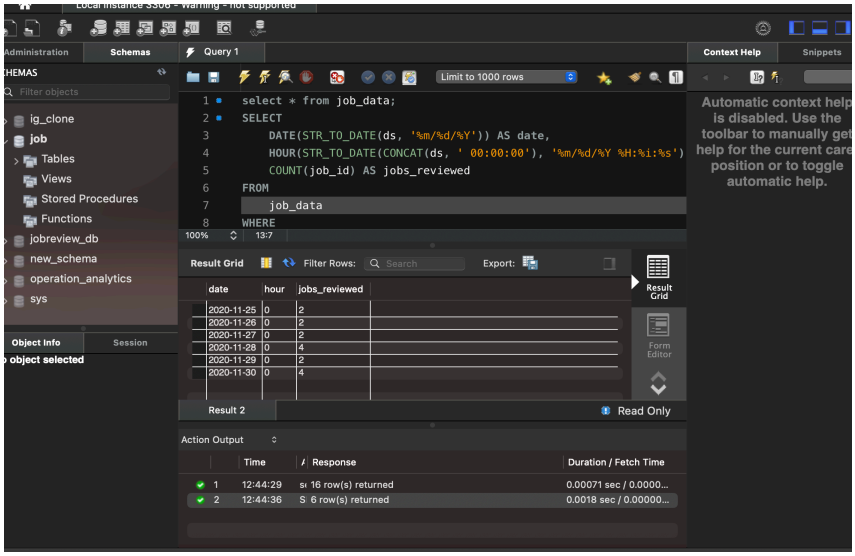
- MySQL Workbench was used: This database administration tool was used to create and manage tables as well as databases. Additionally, it made it possible to run SQL queries for data analysis.
- CSV Files: To enable analysis in MySQL, data was imported from CSV files including job data.

Insights:
The analysis produced a number of insightful findings:

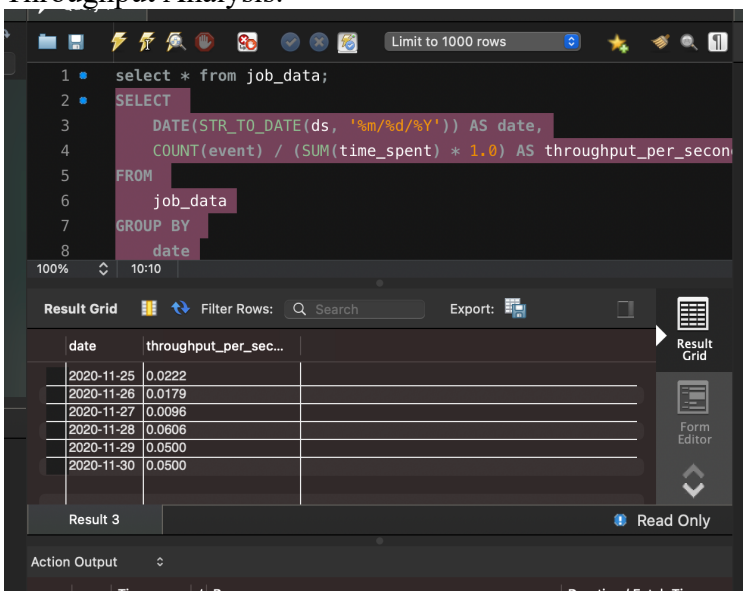
- Jobs Reviewed Over Time: Peak review hours were identified, recommending ideal personnel levels during busy periods.
- Throughput Analysis: By separating out typical variations from real performance difficulties, the 7-day picking average of throughput gave a more solid picture of job review efficiency.
- Language Share Analysis: Knowledge about the preferred languages used by job evaluators helped identify possible areas for specialized training or the distribution of resources.
- Duplicate Rows Detection: This approach found duplicate entries that can distort the outcomes of analysis, emphasizing the necessity of data cleaning and validation procedures.

Result:
I was able to effectively analyze job data through this project, finding trends and insights that are essential for enhancing operational efficiency. The results help to clarify the employment evaluation procedure and enable the business to make informed decisions. This training has strengthened my SQL expertise and analytical skills, equipping me for future challenges in data analysis and operational optimization.

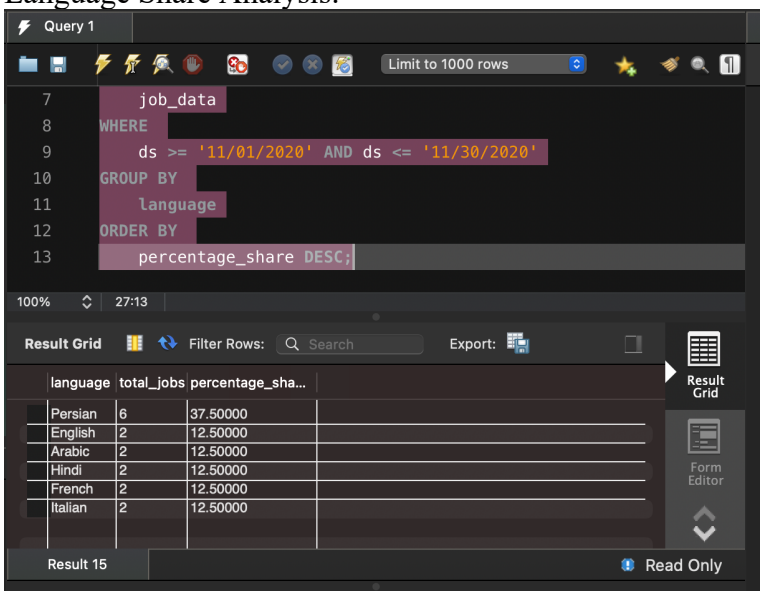
- Jobs Reviewed Over Time:



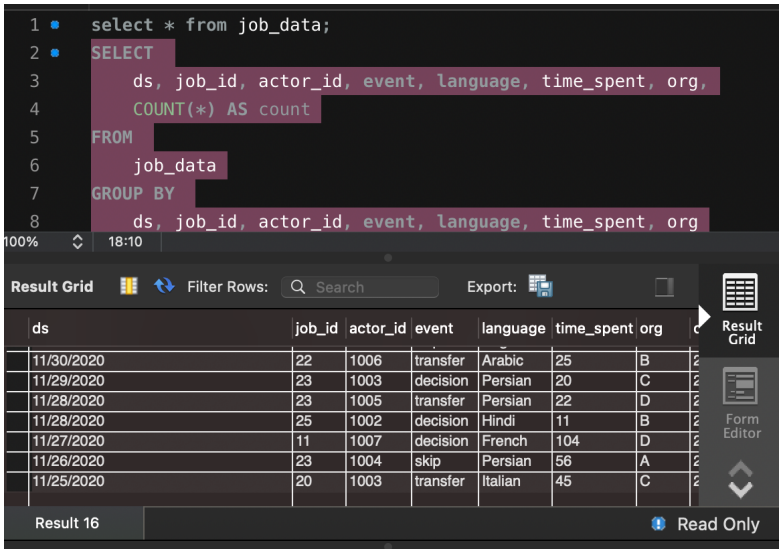
- Throughput Analysis:



- Language Share Analysis:



- Duplicate Rows Detection:



Case study 2: Investigating Metric Spike

Project Description:

In order to better understand and enhance user growth and retention patterns within a digital product ecosystem, the project looks into user engagement measures. In my role as Lead Data Analyst, I looked for patterns and high points in user activity by analysing data from user interactions, events, and email correspondence over a predetermined time frame. Finding insights that would improve user experience, guide marketing efforts, and eventually increase user retention was the aim.

Approach:

I used the following methodical procedure to carry out the analysis:

- Preparing the Data: I made a MySQL database and imported the pertinent CSV files into the users, events, and email events tables.
- SQL Query Development: I developed SQL queries that addressed certain issues concerning user engagement, growth, retention, and email exchanges for every analysis assignment.
- Execution of Queries: I ran the SQL queries to extract information from the datasets, making sure that each was accurate and efficient.
- Analysis of the Results: Following the execution of the queries, I examined the data to obtain insightful and significant interpretations, which I then methodically recorded.
- Report Compilation: In order to improve clarity, I incorporated visuals where appropriate into a structured report style that included the findings, insights, and interpretations..

Tech-Stack Used:

- MySQL Workbench was used: This database administration tool was used to create and manage tables as well as databases. Additionally, it made it possible to run SQL queries for data analysis.
- CSV Files: To enable analysis in MySQL, data was imported from CSV files including job data.

Insights:

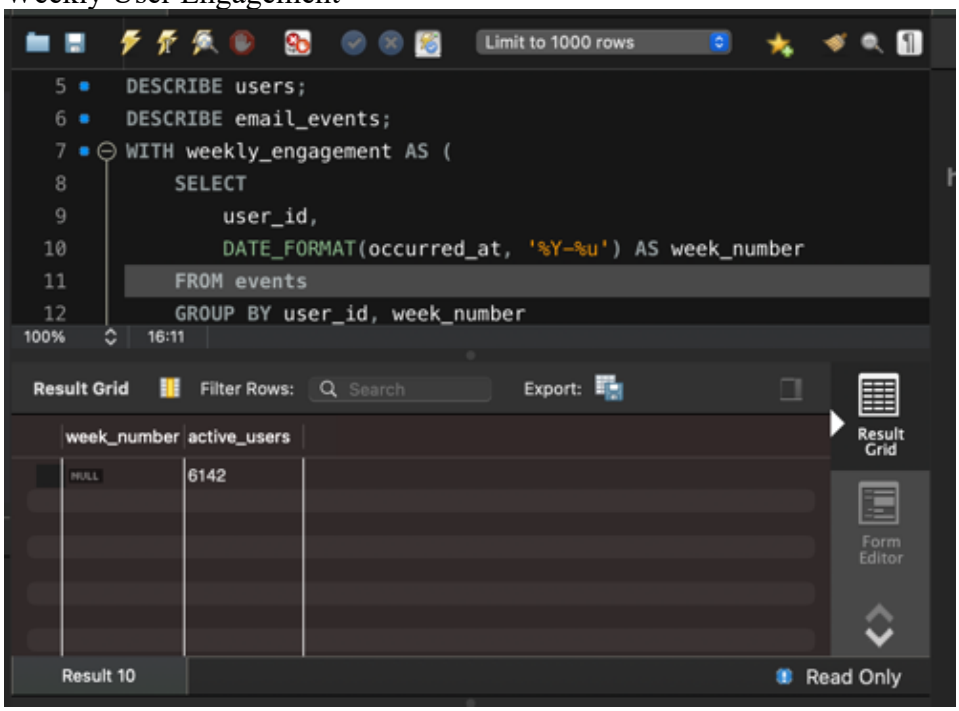
During the analysis, I discovered a few important things:

- User Engagement Trends: According to engagement data, certain promotional times saw a peak in user activity, which suggests that focused marketing campaigns had an impact.
- Growth Patterns: Information on user growth showed that periods of high usage frequently corresponded with new releases of products or promotional campaigns, indicating successful methods of drawing in new customers.
- Challenges with Retention: An examination of user retention revealed a decline in some cohorts, suggesting possible problems with the onboarding procedure or user experience that need attention.
- Device Usage: The research showed variations in user involvement among different kinds of devices, pointing to potential areas for UI improvement for devices that aren't functioning up to par.

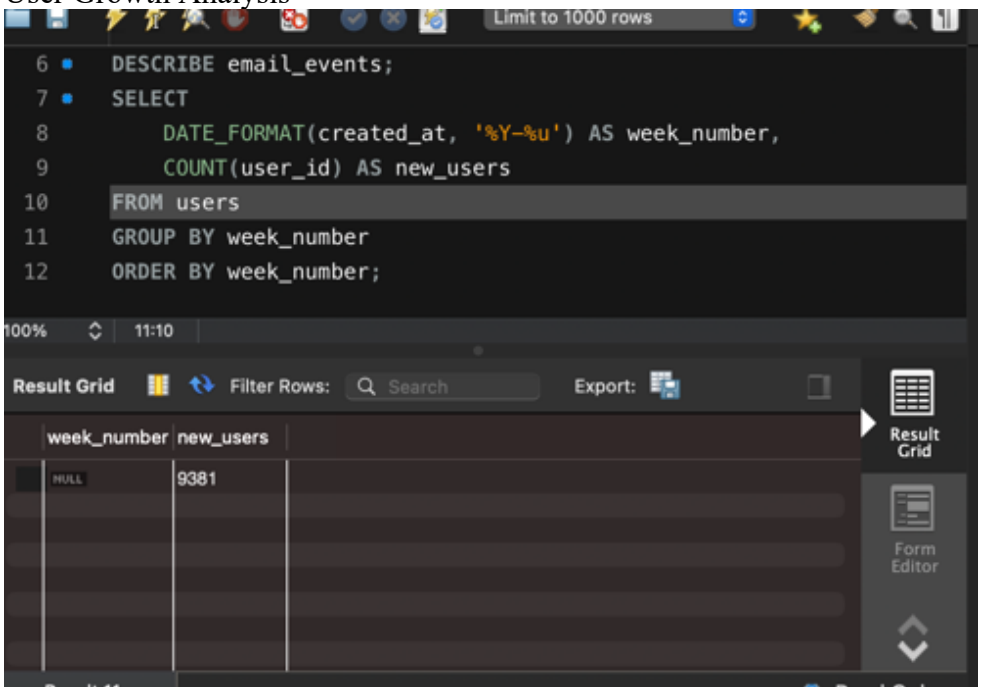
- Email Engagement: Personalized content greatly enhanced user engagements, according to email campaign engagement metrics, indicating the need for customized communication tactics.

Result:
I accomplished this assignment by doing a thorough study of user engagement and growth data, which gave me useful information for making strategic decisions inside the company. The results enhance our understanding of user behaviour and enable more focused enhancements to user experience, marketing tactics, and retention programs. My analytical abilities and SQL competence have greatly improved as a result of this assignment, setting me up for future data analysis difficulties.

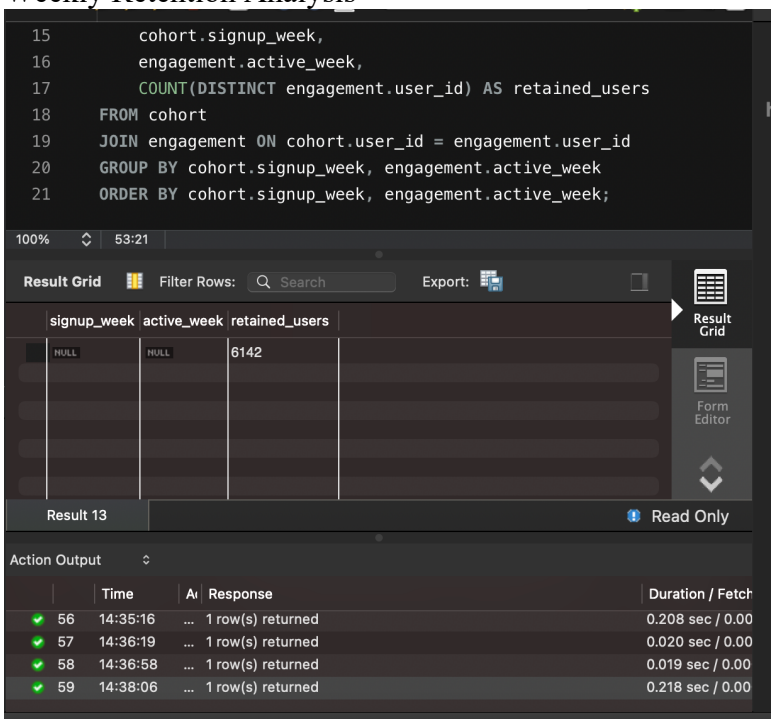
- Weekly User Engagement



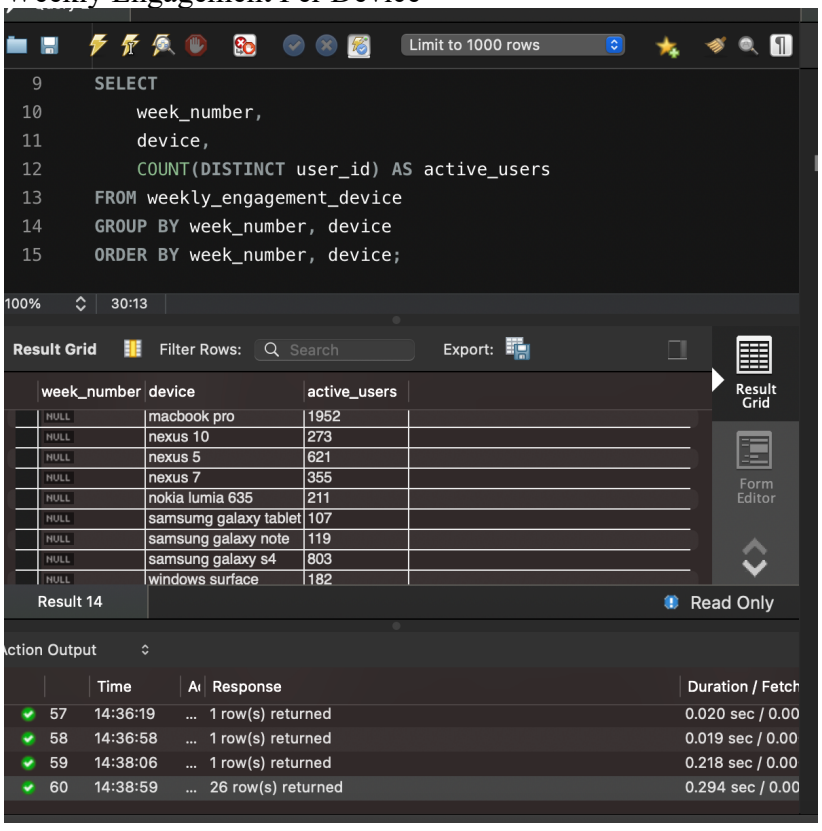
- User Growth Analysis



- Weekly Retention Analysis



- Weekly Engagement Per Device



- Email Engagement Analysis